AMENDMENTS TO CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 (Currently Amended) A reconfigurable apparatus with a high usage rate in hardware by reconfiguring internal processing elements into functional units as needsed, comprising:

at least one reconfigurable unit having a plurality of at least 4-bit processing elements(PEs) and a plurality of at least 4-bit switch boxes connected to the plurality of at least 4-bit processing elements, the at least one reconfigurable unit receiving at least one configuration signal and dynamically combining at least two of the at least 4-bit processing elements and at least one of the at least 4-bit switch boxes according to the at least one configuration signal to thereby form a functional unit which is an adder, a multiplier or an arithmetic logic unit (ALU).

2.(Previously Presented) The reconfigurable apparatus as claimed in claim 1, wherein the reconfigurable unit is homogeneous that has the same processing elements(PEs), heterogeneous that has different processing elements, or combined above.

3.(Previously presented) The reconfigurable apparatus as claimed in claim 1, wherein the switch boxes are used to deliver computed data of the at least two processing elements.

4.(Previously Presented) The reconfigurable apparatus as claimed in claim 3, wherein each switch box includes at least one data bus with or without multiplexer.

5-6 (Canceled)

7. (Currently Amended) The reconfigurable apparatus as claimed in claim 1, wherein the ~~various~~ functional units formed in the reconfigurable apparatus have the same logic blocks which are the PEs.

8. (Currently Amended) The reconfigurable apparatus as claimed in claim 1, wherein the PEs respectively have different ~~computing functions~~ operations.

9. (Currently Amended) The reconfigurable apparatus as claimed in claim 7, wherein the PEs respectively have different ~~computing functions~~ operations.

10. (Currently Amended) The reconfigurable apparatus as claimed in claim 1, wherein the PEs have the same ~~computing function~~ operations.

11. (Currently Amended) The reconfigurable apparatus as claimed in claim 7, wherein the PEs have the same ~~computing function~~ operations.

12. (Currently Amended) The reconfigurable apparatus as claimed in claim 1[[5]], wherein at least one of the PEs has different ~~computing function~~ operations from other PEs.

13. (Currently Amended) The reconfigurable apparatus as claimed in claim 7, wherein at least one of the PEs has different ~~computing function~~ operations from other PEs.

14. (Canceled)

15. (Currently Amended) The reconfigurable apparatus as claimed in claim 7, wherein the ~~various~~ functional units are capable of being further combined into a divider, a floating adder or a floating multiplier.

16. (Previously Presented) The reconfigurable apparatus as claimed in claim 3, wherein the switch boxes deliver the computed data in the same or different modes.

17. (Canceled)

18. (New) The configurable apparatus as claimed in claim 1, wherein the reconfigurable unit is configured to include at least one functional unit, and the functional units in a reconfigurable unit process data in parallel.

19. (New) The reconfigurable apparatus as claimed in claim 1, wherein the reconfigurable unit is configured to act as a Very Long Instruction Word (VLIW) data path, and in the VLIW data path at least one functional unit is included.